

Waste to Energy Projects in the Grampians

Berrybank Farm - Windermere

Berrybank Farm is a large piggery just west of Ballarat. It has a significant waste management system consisting of an anaerobic digester that turns piggery effluent (waste) into biogas to generate electricity energy, potting mix and an odourless organic fertiliser. The nutrient-rich water is also recycled for irrigation purposes. The biodigester has been in operation since 1989.

<https://www.sustainability.vic.gov.au/-/media/SV/Publications/Business/Investment-facilitation/Investment-case-studies/Written-Case-Studies/Investment-Case-Study---Berrybank-Farm---December-2015.pdf>



Pyrenees Straw to Energy - Beaufort

A consortium of 9 landholders in partnership with Pyrenees Shire Council is researching the development of markets for straw from the region. There are potentially one million tonnes of straw/year available across the Grampians region (the estimated amount being burnt). Business cases have been developed to trial energy from straw at the Skipton Hospital and a manufacturing site in the region. There is a well-established straw to energy industry in some European countries. The technology for harvesting, processing, transporting, and storing straw is not new. There are significant developments in machinery to produce straw pellets. These machines are operating in Europe.

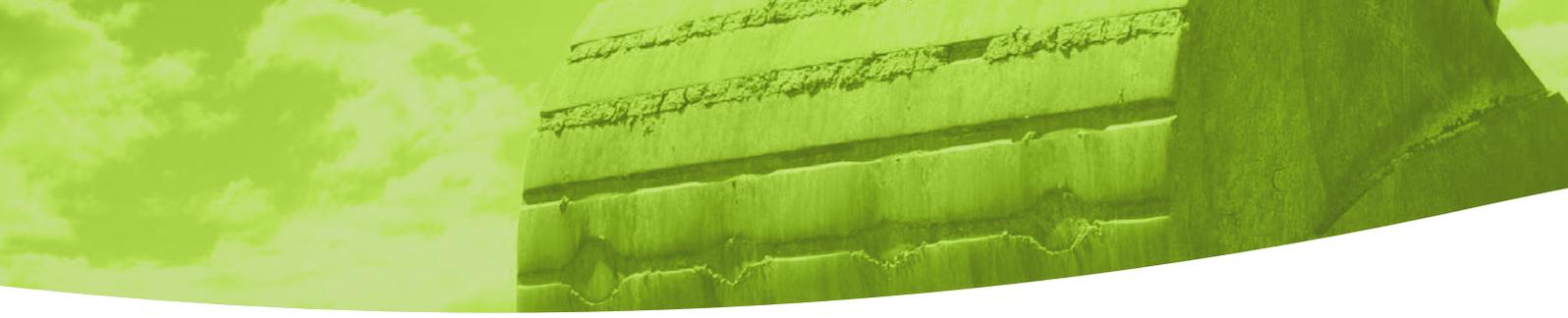


Beaufort Hospital Bioenergy Project

A small rural hospital installed a biomass boiler to replace LPG for its heating and hot water. This has significantly reduced the energy costs of the hospital. The boiler is housed in a modified shipping container which is both a boiler house and a fuel store. The project was completed in 2014.

<https://www.pyrenees.vic.gov.au/Residents/Environment/Regional-Energy-Project/BioEnergy-Resources>





Meredith Dairy

Meredith Dairy is a well-known goat and sheep dairy located 100km west of Melbourne. It installed a 240kW boiler to produce hot water for pasteurisation, washdown and domestic hot water within the factory. It has reduced their reliance on LPG and has significantly reduced their energy costs with a payback period of 2 years. The project was completed in 2017.

<http://biomassproducer.com.au/wp-content/uploads/2019/02/Meredith-Dairy-Case-Study.pdf>



McCallum Linen - Ballarat

McCallum Linen has been funded by the Community Power Hub to prepare a business case for combined solar and wood waste power. It is proposed that a 2 megawatt fully automated woodchip boiler system will replace the current natural gas fired system and a 99kW rooftop PV installation will generate a significant proportion of the enterprises year-round electricity demand and export excess electricity to the grid.

<http://www.communitypowerhub.com.au/portfolio-items/waste-wood-power-commercial-laundry/>



Skipton Hospital

Funding has been received for the establishment of a straw fired boiler at the Skipton Hospital. The project was officially launched in May 2019 and will provide hot water and heating for the hospital. It is expected the project will be completed and operational in late 2020.

<https://www.thecourier.com.au/story/5981119/how-a-farmers-waste-becomes-a-resource-to-heat-a-regional-hospital/>



Hepburn Shire Council - Creswick

The project will construct an anaerobic digester, process 1500 tonnes of food and green waste with the aim of producing high quality syngas that could potentially be injected into the energy grid. A small pilot phase has been established at the Creswick Transfer Station.

<https://www.premier.vic.gov.au/driving-jobs-in-regional-victoria-with-waste-to-energy/>



Maddingley Brown Coal Waste to Energy Facility - Bacchus Marsh

The company plans to use solid recovered fuel to generate electricity at the JBD Industrial Park. It will involve construction of a sorting station and combustion unit at JBD industrial estate and the diversion of approximately 100,000 tonnes of timber, cardboard, and soft plastics. Approximately 10 megawatts of electricity will be fed back to the grid, although significant upgrades to existing powerlines could be required. The initiative is at the testing and approvals stage. The proposal has received a \$500,000 state government grant through the Resource Recovery Infrastructure Fund towards the \$30 million project.

<https://www.maddingleyenergyprecinct.com/>



Gekko Biodigester Trial - Bungaree

Gekko Systems received funding from the Victorian Government to develop and trial a modular biodigester. The technology design and development of the biodigester is the result of collaboration between Gekko Systems and Melville Charles piggery in Ballarat who have operated a biodigester for many years to optimise treatment efficiency. The first demonstration unit has been installed at Trigg's Dairy Farm, Bungaree. This is a 350 head shedded dairy with milking undertaken by 4 robots. The effluent from the dairy is collected and processed to produce biogas to generate power. The system will generate a significant proportion of the energy needs for the dairy.

<https://www.abc.net.au/news/2018-02-17/gekko-systems-use-poo-to-power-ballarat-dairy-farm/9455734>



City of Ballarat

City of Ballarat signed a Heads of Agreement with Malaysian Resources Corporation Berhad to prepare a business case for a proposed w2e facility at BWEZ. The intention is to use incineration technology from Denmark based company Babcock & Wilcox Volund and use MSW to produce energy and heat for use within the Ballarat West Employment Zone. The project is currently on hold.

<https://mysay.ballarat.vic.gov.au/waste-to-energy>



Australian Bio Fert - Bacchus Marsh

Australian Bio Fert have undertaken a research and development project at Bacchus Marsh to utilise chicken waste and mortalities to produce a bioorganic fertiliser through torrifaction. They are undertaking field trials to demonstrate the viability of the fertiliser and have plans to construct a \$20M processing facility at Lethbridge between Ballarat and Geelong.

<https://www.matthewssteer.com.au/latest-news/nurturing-an-organic-waste-management-solution-and-biological-fertiliser>



Grampians New Energy Taskforce

Grampians New Energy Taskforce (GNET) includes all 11 Grampians Local Government Areas, the Central Highlands and Wimmera Southern Mallee Regional Partnerships, RDA Grampians, Wimmera Development Association and the Committee for Ballarat. DELWP (the Victorian Department of Environment, Land, Water and Planning) is providing the secretariat for the GNET working group.

GNET is developing an accord between all parties to authorise and empower the group to represent the Grampians in future energy discussions. Project groups are actively working on a structure to maximise the economic and community benefits of investment and innovation in new and renewable energy initiatives for the region.

<https://engage.vic.gov.au/regional-renewable-energy-roadmaps/grampians-r2z>

Alternative Waste and Resource Recovery Treatment Project

With the first phase of pre-procurement underway in the south and eastern Councils in Metro Melbourne, pre-procurement planning has now begun for the second phase which includes central, western and northern Councils. This phase of procurement can also include surrounding Regional Councils such as Ballarat, Geelong, Bendigo, Moorabool and Mitchell Councils if they would like to take part.

Up to 1M tpa of municipal waste will be contracted to landfill diversion facilities for a minimum of 20 years through both phases of procurement. It is anticipated that there will be multiple facilities located across Melbourne and Regional centres with project objectives to be assessed by Councils. Procurement models are being developed with Councils with a Special Purpose Vehicle option currently being explored.

<https://mwrrg.vic.gov.au/procurement/advanced-waste-processing/>

Grampians Waste to Energy Working Group

Grampians Central West Waste and Resource Recovery Group hosts an active w2e working group in the region to share information and support the development of waste to energy projects across the region.

<https://recyclingrevolution.com.au/>

Community Power Hub

The Ballarat community power hub has been hosted by BREAZE, a community driven organisation dedicated to reducing greenhouse emissions. They have worked with many organisations to help establish the viability of a wide range of energy projects in partnership with local communities. The two-year project concluded June 2019.

<http://www.communitypowerhub.com.au/projects/>

Waste to Energy Conference

The Australian Waste to Energy Forum aims to provide a platform for all interested parties to discuss the development of a waste to energy industry within Australia. The forum has been hosted in Ballarat for the last four years.

<http://aien.com.au/wteforum/>

